

Appl. No. 10/732,917
Amdt. dated March 8, 2006
Preliminary Amendment

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Amendments to the Specification:

Please add the following new paragraphs after paragraph [0090]:

[0090.1] H.324 SRP Extension

[0090.2] There is also scope to optimize H.324 SRP to support faster call setup, call tear-down and other session messaging (H.245 Messaging), in environments where network latency is significant. One of the features of H.324/H.245 is the use of SRP, which provides acknowledgement for all delivered PDUs. This is useful to ensure that all command and control messages have been received at the far end terminal, but provides a limit to the throughput of messages on networks with moderate to high latency (>40ms round trip time).

[0090.3] SRP only allows for one message to be outstanding at any time to ensure guaranteed delivery and correct message sequencing. This latency can be mitigated to some extent by minimizing the number of messages exchanged during call setup such as a message containing multiple Multiplex Table Entries, or combining Terminal Capability Set and Master Slave determination messages, however it does still adversely impact the can setup time.

[0090.4] In addition timeouts are such within H.324/H.245 that if a critical packet (or its acknowledgement) is lost during call setup (perhaps due to data loss) the call may fail, and abort if timer values within stack implementations are not tuned appropriately.

[0090.5] All of these phases are necessary to remain standards compliant, but it may be the case that in some circumstances SRP may be used in such a way to allow messages to be sent while an SRP ACK is outstanding.

[0090.6] In many cases the H.324/H.245 procedures are artificially held back due to the behavior of H.245/SRP. Essentially independent procedures such as the opening of different logical channels are unnecessarily coupled by the requirement that only one H.245 SDU may be outstanding at any time. By removing this limitation for independent procedures it is estimated that the time to execute H.245 procedures could be reduced by between 50-100%.

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[0090.7] Some SDUs must be preserved in strict order, for example with all procedures, or within a single instance of an Open Logical Channel procedure, however independent OLC requests do not need to be coupled as they are in the current standard.

[0090.8] In order to allow new SDUs to be transmitted while SRP ACKs are outstanding a means of identifying SRPs and associating them with the relevant message is required. One approach would be to use Numbered SRPs are required. The alternatives to this scheme are based on a Selective ACK, or a sliding window scheme, as described below.

[0090.9] In order to minimize implementation complexity and maintain maximum consistency it is recommended that a sliding window scheme is used. This will allow the H.324/H.245 implementation to send a maximum of n SRP packets without corresponding ACKs being received. The H.245 implementation itself must maintain locking to ensure that only one SDU ACK is outstanding from each state machine instance (typically per H.245 procedure), otherwise message sequences within each state machine cannot be guaranteed.

[0090.10] In order to enable this behavior the H.324 entity must be able to signal to the far end that it is capable of handling this scheme. It is suggested that this be included with Terminal Capability Set, as is the case with NSRP, but a alternative header field would be required to specify the remote handling of this case. In the case where the fast connect scheme described above is used this will have no impact on call setup time, however it will improve speed and reliability for subsequent H.245 control operations.